The Evolution of the Direct Communications Link

By Robert C. Ribera

"Upgrading the Hotline through facsimile transmission was one of three confidence building measures vis-à-vis the Soviet Union that U.S. Secretary of Defense Caspar Weinberger recommended in his 'Remarks to the Congress on Direct Communications Links and Other Measures to Enhance Stability,' dated April 11, 1983."

SINCE 1963, the United States and the Soviet Union have seen the need for a reliable, secure communications link (Hotline) that would permit the leaders of each government to share each other's views. The agreement of July 17, 1984, to add facsimile further confirms the mutual desire to keep the communications path open and to make it more effective by introducing a capability to transmit maps, charts and other pictorial data.

This article reviews the first political initiatives that led to the establishment of teletype capability in 1963; the subsequent activation of two satellite transmission paths in 1978; and the 1984 initiative, together with the steps taken to implement it.

The First Circuits

In April 1962, the United Nations' Eighteen Nation Committee on Disarmament (ENCD) began consideration of measures that would reduce the risk of a communications failure between the United States and the Soviet Union that could lead to accidental war. Among the proposals was the establishment of a rapid and reliable communications link between the leaders of each government. The October 1962 Cuban missile crisis underscored the need for direct communications between Washington, D.C. and Moscow. The original Hotline agreement was incorporated in a Memorandum of Understanding, which the acting representatives of the United States and the Soviet Union to the Conference of the ENCD had negotiated and signed on June 20, 1963.

The parties undertook to establish two relatively slow teletype circuits between their capitals. Activated in August 1963, the primary path used submarine cable and terrestrial microwave facilities transiting England, Denmark, Sweden and Finland; for diversity, a backup radio circuit was established via Morocco.

Satellite Transmission

The Hotline was made more reliable by the activation of two satellite transmission paths in 1978. These circuits were in accordance with the Agreement on Measures To Improve the Direct Communications Link, negotiated by a special working group from the U.S. and Soviet delegations to the fifth phase of the Strategic Arms Limitations Talks (SALT). Another special working group of SALT negotiated the Agreement on Measures To Reduce the Risk of Outbreak of Nuclear War between the United States and the Soviet Union, which the updated Hotline was intended to

implement in part. Secretary of State William P. Rogers and Soviet Foreign Minister Andrei Gromyko signed both agreements in Washington, D.C., on September 30, 1973.

The new capabilities used the Soviet Molniya system and the INTELSAT system. The United States constructed a Molniya earth station in Fort Detrick, Maryland, and the Soviets constructed an INTELSAT earth station in Moscow to provide fully redundant, diverse paths. (The backup radio circuit was taken out of service.) The satellite paths complement the cable/microwave path; each technology contributes to overall system realibility and survivability.

The Introduction of Facsimile

Upgrading the Hotline through facsimile transmission was one of three confidence building measures vis-à-vis the Soviet Union that U.S. Secretary of Defense Caspar Weinberger recommended in his "Report to the Congress on Direct Communications Links and Other Measures To Enhance Stability," dated April 11, 1983. The other two measures were the establishment of a Joint Military Communications Link (JMCL), to be used for rapid exchange of technical military information not normally communicated at the head of state level, and the establishment of high speed data links between each government and its embassy in the other's capital. In addition, the Weinberger report recommended that consideration be given to a multilateral agreement providing for consultation in the event of a nuclear incident caused by a terrorist group or in the event terrorist groups sought to acquire nuclear weapons. (The report resulted from a study undertaken pursuant to Sec. 1123(a) of the Department of Defense Authorization Act, 1983.)

On May 24, 1983, President Reagan announced that he endorsed the recommendations of Weinberger's report. In August 1983, negotiations opened in Moscow. Subsequent sessions were held in Washington, D.C., in January 1984. On July 17, 1984, Acting Secretary of State Kenneth Dam and Soviet Charge d'Affaires Victor F. Isakov exchanged notes in which the United States and the Soviet Union agreed to add facsimile transmission capability to the Direct Communications Link between Washington, D.C. and Moscow. The Soviets did not wish to discuss the JMCL or the proposed improvement in embassy-capitol communications. In June 1985, however, the United States and the Soviet Union reached agreement on clarifying their obligations under the 1971 "Accident Measures" agreement to consult in the event of a nuclear incident involving unknown or unauthorized parties.

Under the agreement, a facsimile circuit was added. It is capable of transmitting and simultaneously receiving 4,800 bits per second on three transmission links. An orderwire circuit for each transmission link will permit signaling between operators and monitoring technical performance of the transmission itself. When each party has completed development, procurement and delivery of the necessary equipment, facsimile communication will begin with a test operation over INTELSAT. After successful tests of facsimile communication via INTELSAT and cable, and after the teletype circuit in the Molniya II satellite has been shifted to the Soviet Statsionar satellite, facsimile communication via Statsionar will begin.

In order to ensure secure transmission of facsimile materials, the parties have agreed to employ a microprocessor as an information security device. It will produce a secure stream by combining the digital facsimile output with randomly selected, computer generated data that has been programmed on to a standard size floppy disk. The United States agreed to provide the necessary floppy disks until such time as both parties are able to exchange disks. The United States also has agreed to provide the required floppy disk drives to the Soviet Union. In return, the Soviet Union agreed to reimburse the costs of the security devices and spare parts provided to them.

Further, each party agreed to establish and to maintain, at each operating end of the Direct Communications Link, facsimile terminals of the same make and model, with each party being responsible, except as otherwise specified in the agreement, for acquiring, installing, operating and maintaining its own facsimile machines, the related information security devices and local transmission circuits. A Group III facsimile unit, which meets Recommendations T.4 and T.30 of the International Telegraph and Telephone Consultative Committee (CCITT), will be used for the facsimile terminals. The United States agreed to provide the necessary facsimile equipment and spare parts to the Soviet Union against reimbursement costs.

A separate provision covers the establishment and maintenance of orderwire communications required to coordinate facsimile operations. Orderwire terminals, used with the information security devices for transmission of facsimile materials, must incorporate standard cyrillic and roman keyboards and cathode ray tube displays to permit telegraphic exchange of information between operators. An orderwire must be configured to permit the exchange of all information pertinent to coordinating facsimile messages prior to their transmission and reception. Orderwire messages concerning facsimile transmissions are to be encoded by using the information security devices specified for facsimile transmissions. The orderwire will use the same modem and communications link used for the facsimile transmission itself. A printer will record all information exchanged on the orderwire. The United States agreed to provide the necessary orderwire equipment and spare parts to the Soviet Union against reimbursement of costs.

Finally, each party agreed to ensure the exchange of information necessary to operate and to maintain the facsimile system, and to take all measures to assure the continuous, secure and reliable operation of th facsimile equipment, information security devices a communications links including orderwire, for whic each party is responsible in accordance with the agreement.

Facsimile Implementation

U.S. and Soviet technical experts have met on several occasions in both Washington, D.C. and Moscow to determine, among other things, a schedule for implementing the facsimile capability; to agree on a specific system design; to make arrangements for the transfer of components and spare parts from the United States to the Soviet Union; and to organize appropriate training programs. These activities have progressed to the point where INTELSAT and cable circuits are anticipated to be fully operational in early 1986 with the Statsionar circuit operational in late 1986 or early 1987.

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